



Frontispiece 1. One of more than 20 bronze statues recovered during excavation of the Etruscan/Roman-period sanctuary at San Casciano dei Bagni, near Siena, Italy. The sanctuary is one of many in Tuscany and northern Lazio located at thermal springs. The statues, as well as many other votive offerings, including more than 5000 coins, were deposited in the mineral waters between the second century BC and the first century AD. Some of the statues represent deities, including Hygeia and Apollo. Other finds include both Etruscan and Latin inscriptions naming important local families. A new museum in San Casciano is being planned for the display of the finds (photograph © Italian Ministry of Culture).



Frontispiece 2. Aerial photograph of mud-brick buildings with ovens under excavation at Tel Muhammad, near Baghdad, Iraq. A cuneiform inscription associates the site with the Babylonian ruler Hammurabi (c. 1792–1750 BC). The current excavations focus on urban development in the first half of the second millennium BC, especially of the Old Babylonian mud-brick city wall and canals. As part of the project, work to conserve previously excavated areas will be undertaken and interpretation panels installed. The site is being investigated as part of the Baghdad Urban Archaeological Project, a collaboration between the University of Catania and the Iraqi State Board of Antiquities and Heritage, with the support of the Italian Ministry of Foreign Affairs and International Cooperation (photograph © BUAP—University of Catania).



EDITORIAL

Recipes for success

Over the past 12 months, UNESCO has added six foods and associated cultural traditions to its list of Intangible Cultural Heritage, including French baguettes, Tunisian harissa, Korean noodles and Ukrainian borscht. Cuisines, preparation methods and eating practices such as these have come to define social, cultural and political identities during the Holocene. Further back in time, however, the evidence is less abundant, and the narrative shifts from cuisine to calories, from identities to energy. In particular, evidence for the consumption of plant foods becomes scarcer, feeding the popular perception that our ancestors were meat-eating hunters rather than omnivorous hunter-gatherers. Recent methodological advances in bioarchaeology have greatly enhanced our knowledge of Palaeolithic plant consumption; plant microfossils from dental calculus, and residue and lipid analyses of stone tools and coprolites have provided evidence for the consumption of a range of plant species by Neanderthals and modern humans. We are now also able to detect evidence for plant food preparation and cooking. In this issue, Ceren Kabukcu and colleagues examine carbonised food remains recovered from two well-known sites: the Franchthi Cave in the Peloponnese and Shanidar Cave in Iraqi Kurdistan. Using scanning electron microscopy, the authors identify the types of plant foods present and the preparation techniques used to help make them edible. The remains from Upper/Final Palaeolithic strata at Franchthi Cave, for example, indicate the coarse grinding or pounding of legumes. Meanwhile, at Shanidar Cave, Upper Palaeolithic remains include a mix of pulses, wild mustards and *Pistacia*, while a sample of Mousterian date (70–75ka BP)—currently the earliest direct macrobotanical evidence of Palaeolithic plant food processing from South-west Asia—contains pulses and grasses. Preparation practices such as soaking and pounding can be used to detoxify bitter foods, but there is also growing evidence for the intentional selection of bitter or astringent plants for consumption. The results presented here therefore add to the growing evidence for the preparation and consumption of plant foods during the Late Pleistocene and hint at the emergence of ‘cuisines’ long before the development of sedentism and farming.


All that glisters

The Bronze Age burial of Upton Lovell G2a in Wiltshire, England, was excavated over 200 years ago; the intriguing finds made by William Cunnington have been the subject of sustained discussion ever since. Specifically, what do these grave goods, including perforated bone points, stone rubbers, a copper alloy awl, broken battle axes, polished flint axes, jet beads and flint nodule cups, tell us about the identity of the person with which they were

interred? Was this individual a shaman, a metalworker, or perhaps a goldworker?¹ In this issue, Rachel Crellin and colleagues argue that there are other questions that we might ask. Rather than focus on the identity of the deceased, the authors consider what the assemblage can tell us about the meanings of materials and the making of objects. Deploying use-wear analysis and scanning electron microscopy to investigate a selection of the objects, the authors interpret the results within a new materialist framework. Based on evidence for ongoing repair and reuse, and on the presence of microscopic traces of gold, they outline a *chaîne opératoire* for sheet-goldworking. Some of the tools were intentionally repurposed objects, which, the authors suggest, brought their own histories to the newly formed gold artefacts they helped to shape. Through this exploration of different materials, the authors conclude that goldworking may have been perceived as more similar to stoneworking than working with other types of metal, arguing that our scientific taxonomies may map poorly onto those of the Bronze Age world.

Amber, like gold, is another material that defies easy categorisation. Formed from the fossilised resin of trees, amber is an ‘organic stone’. Like gold, amber is a soft material that can shift from solid to liquid. It can also be polished to a high lustre and can hold an electrical charge—all properties that have long made amber a highly desirable material. In prehistoric Europe, the shores of the Baltic and North Seas were not the only source of amber but were certainly among the most important. In this issue, Timothy Earle, Jens-Henrik Bech and Chiara Villa examine evidence for amber collection in northern Jutland over four millennia, from the Neolithic to the Iron Age. In the context of an overview of the gathering and exchange of amber in the Thy region, the authors present two recent discoveries. The first is a cache of more than 10 000 amber beads associated with the Neolithic Funnelbeaker Culture. Unlike contemporaneous amber finds, which are interpreted as ritual deposits in bogs, the discovery of this cache in a dryland context close to a causewayed enclosure leads the authors to link the beads to the stockpiling of amber objects for elite display, or for exchange through the expanding social networks of Northern Europe. The second find comprises several deposits of unworked amber from a Late Bronze Age, non-elite settlement. This material, the authors argue, may indicate that control over the collection and exchange of amber had passed from elites to commoner households, who now engaged directly in long-distance trade. To date, the study of amber has focused predominantly on those contexts where it was consumed—far from where it was collected—and where, therefore, its value and significance had been transformed. Integrating the archaeology of source regions such as Thy into the wider study of the exchange and consumption of amber allows us to trace the physical movement of this material, to appreciate its constantly shifting meanings, and to assess the effects of demand for amber in Southern Europe on social organisation thousands of kilometres away on the North Sea coast.

Bog bodies and big data

 Through their anaerobic environments, wetlands can preserve unparalleled archaeological evidence. Yet wetlands and their archives of environmental and archaeological data are also

¹ SHELL, C. 2000. Metalworker or shaman: Early Bronze Age Upton Lovell G2a burial. *Antiquity* 74: 271–72. <https://doi.org/10.1017/S0003598X00059202>

vulnerable to a range of threats, including drainage, development and climate change.² In the context of decarbonising the global economy and protecting biodiversity, recent international agreements have recognised the potential of wetlands to sequester carbon and restore healthy ecosystems. But while such treaties offer hope, the threats have not gone away. An interesting case is Ireland, where peat or ‘turf’ cutting in the past has yielded many important archaeological finds, including the Iron Age bog bodies from Oldcroghan and Clonycavan. In 2022, the Irish government banned large-scale commercial peat cutting due to its negative environmental and health impacts. With the spiralling costs of energy over the past year, however, there are reports of a revival of cutting under traditional family rights to gather peat for personal use.³ Such cutting, though small scale, may damage archaeological deposits. More broadly, however, it illustrates how longer-term environmental concerns may come into conflict both with traditional cultural practices and the economic realities of the present. The same tension underlies the historic agreement reached at COP15, the UN Convention on Biological Diversity held in Montreal in December 2022. Among other goals, the newly signed ‘Kunming-Montreal Global Biodiversity Framework’ commits nations to huge reductions in government subsidies for industries that are harmful to biodiversity. It also aims, by 2030, to instigate the conservation and management of at least 30 per cent of global environments, including some of its most diverse and important ecosystems. The agreement emphasises the integral role of Indigenous populations in the stewardship, through traditional practices, of many biodiversity hotspots. Concerns have been voiced, however, about the potential impact of the framework on these Indigenous communities and the degree to which the agreement effectively perpetuates a colonial approach, imposing costs, restrictions and responsibilities onto those who have done the least damage, while permitting industrialised countries to continue their destructive habits.⁴ In the broadest sense, the reconciliation of these competing interests of economy, environment and identity lies at the heart of the UN’s Sustainable Development Goals, of which the traditional cutting of peat in Ireland is just one example among many.

All of this brings us back to the rich and well-preserved archaeological evidence to be found in bogs, mires and other wetlands. In this issue, Roy van Beek and colleagues present a ‘big data’ approach to one of the most compelling of archaeological finds: bog bodies. Collating data from an area stretching from Ireland to the Baltic states, the authors interrogate a database of more than 1000 individuals recovered from more than 250 sites. Most of these finds were made during the drainage of wetlands or the cutting of peat over the past 200 years—and they continue to be discovered today (Figure 1). The astonishing preservation of some of these individuals, and their often-grisly deaths, understandably capture the imagination. Some, such as Tollund Man, have been the subject of both cutting-edge scientific

² MATTHIESEN, H., R. BRUNNING, B. CARMICHAEL & J. HOLLESEN. 2022. Wetland archaeology and the impact of climate change. *Antiquity* 96: 1412–26. <https://doi.org/10.15184/aqy.2022.112>

³ <https://www.theguardian.com/world/2022/dec/12/like-an-oilwell-in-your-back-yard-irish-turn-to-cutting-peat-to-save-energy-bills>


⁴ e.g. <https://theconversation.com/indigenous-conservation-funding-must-reflect-canadas-true-debt-to-first-nations-inuit-and-metis-196772>



Figure 1. Archaeologist Lea Mohr Hansen cleans animal bones found together with parts of a human bog skeleton, at Edegal, near Copenhagen, Denmark. Discovered in October 2022 during preliminary archaeological investigations in advance of construction work, other finds include pottery and an unused stone axe of possible Neolithic date. Full excavation of the site, and dating of the human remains, are planned for 2023 (photograph © Christian Dedenroth-Schou, ROMU).

investigation⁵ and poetic reflection: Seamus Heaney describing “Those dark juices working / Him to a saint’s kept body”.⁶ Rarely, however, has the deposition of bog bodies been systematically investigated at a continental scale and across a long chronological sweep. Here, the authors plot the shifting regional patterns of bog body deposition from the Neolithic through to the nineteenth century AD. While they confirm several well-known trends, including a peak in deposition during the Iron Age and Roman period, they also identify previously undetected pulses of activity during the Early Bronze Age and medieval period. Another discernible trend is the predominance before *c.* 1000 BC of bog skeletons (i.e. bones that can reasonably be assumed to derive from the deposition of complete bodies), the loss of soft tissues reflecting the specific preservation conditions of different types of bog and mire. Whether during peat cutting or development work, the discovery of further bog bodies is almost inevitable; here, the authors demonstrate the value of characterising the bigger picture within which the unique biography of each individual can be better understood.

Persistence and place

 Big data projects are increasingly common in archaeology, seeking to leverage the potential of ‘legacy’ data through their integration and statistical analysis, and often making use of GIS and spatial analysis. This issue features two other examples of big data research. David Beresford-Jones and colleagues take us to the Andes of southern Peru to explore human mobility between the high Puna—more than 4000m above sea level—and the coast. The authors combine stable isotope data from human and animal hair, as well as proxies such as obsidian, with the results of two large regional surveys that provide evidence for settlement and landscape exploitation across the full altitudinal range of two adjacent watersheds. Their results point to varying rhythms of mobility over the past five millennia, between the Archaic and the Late Horizon/Inca period, shaped by shifting social, political and economic dependencies. One constant, however, is that rather than deterring human mobility, the steep gradient from the high Andes to the coast actively encouraged the movement of people, animals and goods. Moving between sharply defined ecotones, for example, offered communities a way of buffering against the risks associated with living in any single environmental niche.

The third big data article featured in this issue focuses on the question of settlement persistence, using data from seven regional case studies to quantify the longevity of individual sites. The analysis by Katherine Crawford and colleagues reveals significant variation within and between regions, which they relate to the environmental potential of the sites’ territories. As the persistence of sites can be related to sustainability and resilience, the authors argue that such analysis contributes to urgent questions about the future of modern-day cities. Inevitably, however, focusing on any individual site reveals some of the enormous variety in settlement form and history. In this issue, we feature studies of two very different individual sites. Vincent Ard and colleagues present the fifth-millennium BC site of Le Peu, in south-western France. Here, excavations have revealed an Early Neolithic defensive site, featuring an

⁵ NIELSEN, N.H. *et al.* 2021. The last meal of Tollund Man: new analyses of his gut content. *Antiquity* 95: 1195–212. <https://doi.org/10.15184/aqy.2021.98>

⁶ HEANEY, S. 1972. The Tollund Man, in *Wintering out*. London: Faber & Faber.

enclosure ditch with a double timber palisade and an entranceway defined by two substantial timber ‘bastions’. This early monumentalisation is associated with four domestic structures—currently the earliest known in this region of France. More important than this early date, however, is that the chronology of these buildings overlaps with that of a nearby group of long burial mounds and associated quarries. Here, we catch an exceptional glimpse of a contemporaneous landscape of the living and dead, connected and defined by early forms of monumentality.

Over five millennia later and on the other side of Europe, Khan Omurtag selected the small, fortified site of Veliki Preslav as the new capital of the Bulgarian Empire. During the ninth and tenth centuries AD, the existing fortress rapidly grew to become one of the largest cities of the European early Middle Ages, rivalling in size the contemporaneous imperial capitals of Constantinople and Baghdad. In this issue, Peter Milo and colleagues present the results of geophysical survey work at Veliki Preslav, revealing the scale and organisation of the urban landscape. Previous work has focused on the fortified Inner City of palaces, churches and state buildings and the associated walled Outer City; here, the authors demonstrate how equal attention to the city’s extensive extramural suburbs reveals a greater range of evidence, including small domestic structures, craftworking areas and a possible military camp. Despite its political patronage, great wealth and vast size, however, Veliki Preslav was not a ‘persistent’ site as defined in the article by Crawford and colleagues. Indeed, within a century of its promotion to capital status, the city had been burned and looted; over the following few centuries, first political and then economic power ebbed away, and the site contracted into a small, rural village. The sustainability and resilience of settlements such as Veliki Preslav clearly depended upon political patronage as much as the environmental capacity of their hinterlands.

Altered images

As I habitually remind students who have submitted their unillustrated essays for grading, archaeology is a highly visual discipline. Maps, plans, sections, charts, infographics, photographs, drawings and reconstructions are integral to how we construct and communicate archaeological knowledge. *Antiquity* authors (and readers) benefit from the inclusion of up to 10 full-page, full-colour figures per research article, helping to illustrate and support their verbal accounts. But images are not subordinate to words; indeed, they can be more powerful and persuasive. In this issue, Marianne Moen, Neil Price and Unn Pedersen explore visual archaeological knowledge production through reconstruction drawings of the well-known Viking-Age burial site at Kaupang, southern Norway. Excavations in the 1950s revealed a boat burial containing three, possibly four, human interments. The findings detailed in the final excavation report were reanalysed 15 years ago and a new account of the site published, incorporating a reconstruction drawing that has subsequently circulated widely in both scholarly and public arenas, coming to define the site in a single, authoritative image. Yet, the reconstruction necessarily omits much of the uncertainty around the original excavation and communicates an interpretation rather than a definitive reality. The artist’s decisions, such as viewing angle and the arrangement of the bodies, subtly shape the viewer’s understanding, as does the compression of the temporal sequence of the funerary



Figure 2. Reconstruction of the Upton Lovell 'shaman' (illustration © Kelvin Wilson).


performance into a single snapshot. The authors explore these issues through a series of alternative reconstructions, including a newly commissioned image by the same artist who created the original drawing. In doing so, the authors argue in favour of the juxtaposition of multiple reconstructions as a means of foregrounding their interpretative nature, and to encourage a more critical engagement—with the knowledge claims of these powerful images (see Figure 2 for a reconstruction of the Upton Lovell 'shaman' based on the grave goods, discussed in the article by Crellin *et al.* in this issue).

Of course, the importance of the visual in archaeology extends well beyond the ways in which we make images in the present. Archaeologists also deal with images from the past. The article by Christopher Stimpson & Barry Kemp featured in this issue turns to the richly painted walls of the North Palace at Amarna for a spot of Egyptological 'twitching'. Ancient Egyptian art is well known for its carefully observed depictions of plants, animals and birds. Here, the authors reconsider the wall paintings of the so-called Green Room, part of a royal complex of the late Eighteenth Dynasty (fourteenth century BC). The paintings were discovered during excavations in the 1920s; though badly damaged, the colours remained vivid, and the scenes of bird and plant life were quickly recognised as important examples of ancient Egyptian art.

Today, the wall paintings are best known through an accomplished copy made by Nina de Garis Davies shortly after their discovery, which is now displayed in the Metropolitan Museum of Art in New York. In their article, the authors explore the interplay between naturalism and artistic licence, seeking to determine the Linnaean classification of the birds depicted among the papyrus plants of this Nilotic scene. Consideration of bird markings and their habits allows the authors to suggest the interpretation of species common to the immediate environs of Amarna. The combination of the painted walls and windows framing views of the surrounding landscape served to merge architectural and natural spaces, creating an immersive experience of the Nile landscape.

Whether in the ancient Egyptian past or circulating as memes on social media, images are always more than mere illustration or decoration; they construct realities, communicating powerful messages in subtle ways.

Also in this issue

 In addition to the articles already mentioned, readers will find lots of other content in this issue. Tomasz Płonka and colleagues present new AMS radiocarbon dates for decorated bone and antler artefacts from Pomerania that add to the growing corpus of archaeometrically dated European Mesolithic art, and offer new insights into possible connections between cultural groups around the western Baltic. Fredeliza Campos and colleagues remind us of the importance of music in the past, presenting two artefacts from the site of Go O Chua in southern Vietnam, which they interpret as single-stringed chordophone instruments. At least 2000 years old, these objects resemble ethnographically attested instruments from the region, hinting at a long musical tradition in Southeast Asia. Meanwhile, Johan Claeys and colleagues report on an unusual burial from the Roman site of Sagalassos in Türkiye. Following cremation, the pyre site and the cremated human remains were buried *in situ*, along with a scattering of intentionally bent nails, and then carefully sealed beneath layers of tile and lime. Tacking between ancient textual sources and archaeological parallels from elsewhere in the Mediterranean world, the authors argue that magical beliefs were at work, perhaps reflecting fears that the ‘restless dead’ would return unless ritually and physically contained.

We also feature a new selection of Project Gallery articles, including research on one of the largest *kofun* or burial mounds of Kofun-period Japan (Jun Mitsumoto *et al.*), an update on the latest discoveries at the extraordinary Bronze Age site of Sanxingdui in China (Yingfu Li *et al.*; see this issue’s cover image) and new evidence from Sudan indicating that human occupation of today’s eastern Sahel region dates back to at least the twelfth millennium BP, bringing it into close chronological alignment with the colonisation of the river valleys (Ladislav Varadzin *et al.*). Meanwhile, the reviews section considers a variety of recently published volumes on topics as varied as palaeogenetics and archaeology for wellbeing. Also in the reviews section is the final New Book Chronicle by outgoing Reviews Editor, Claire Nesbitt. A specialist in Byzantine archaeology, Claire’s concluding NBC appropriately focuses on the classical and Byzantine archaeology of the Eastern Mediterranean. Over the past four years Claire has guided not only the reviews section but also, as Deputy Editor, managed the Project Gallery, including the introduction of a more rigorous peer review process. Our thanks to Claire for all her work on the book reviews and Project Gallery articles; we wish her well with her new venture. In Claire’s place, it is a pleasure to introduce our new Reviews Editor, Marion Uckelmann. Marion is a specialist in European Bronze Age archaeology and has published extensively on aspects of metals, warfare and combat. She has also previously worked in publishing, as an editor of the *Prähistorische Bronzefunde* series. The contact details for any queries about book reviews remain the same: reviews@antiquity.ac.uk. Do contact Marion with any suggestions for books that might be suitable for review, or if you are interested in reviewing for *Antiquity*.

Editorial

As ever, we hope you will find something of interest in the current issue. If you would like to see your own research featured in the pages of *Antiquity*, please do get in touch via editor@antiquity.ac.uk to discuss ideas, or come and chat with members of the team at any of this year's conference events, including the SAA meeting in Portland, Oregon, and the EAA in Belfast, Northern Ireland.

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Durham, 1 February 2023